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CHAPTER V

ESTABLISHMENTS AND INDUSTRIES

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V. ESTABLISHMENTS AND INDUSTRIES

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V. ESTABLISHMENTS AND INDUSTRIES

List of Acronyms

CPC	Central Product Classification
ISIC	International Standard Industrial Classification
NPI	non-profit institution

V. ESTABLISHMENTS AND INDUSTRIES

A. Introduction

1. Institutional units were defined in <chapter IV, Institutional Units and Sectors>. This chapter, which starts off with a view of institutional units in their capacity as producers, defines an institutional unit engaged in production as an enterprise. An enterprise may be a corporation (a quasi-corporate enterprise being treated as if it were a corporation in the System), a non-profit institution (NPI), or an unincorporated enterprise. Corporate enterprises and NPIs are complete institutional units. An unincorporated enterprise, however, refers to an institutional unit - a household or government unit - only in its capacity as a producer of goods and services. It covers only those activities of the unit which are directed towards the production of goods or services. Many households do not contain an unincorporated enterprise.

2. A single enterprise, especially a large corporation, may engage simultaneously in many different kinds of production, there being virtually no upper limit to the size of an enterprise. If enterprises are grouped together on the basis of their principal activities, at least some of the resulting groupings are likely to be very heterogeneous with respect to the type of production processes carried out and also the goods and services produced. Thus, for analyses of production in which the technology of production plays an important role, it is necessary to work with groups of producers who are engaged in essentially the same kind of production. This requirement means that some institutional units must be partitioned into smaller and more homogeneous units, which the System defines as establishments. Further, the System defines industries as groups of establishments. In the System, Production Accounts and Generation of Income Accounts are compiled for industries as well as sectors.

3. The chapter first discusses productive activity and its classification in order to lay the ground for defining establishments and subsequently industries. The definitions that emerge as well as the underlying definitions of kinds of activities and of statistical units other than establishments are consistent with the definitions in the third revision of the International Standard Industrial Classification of All Economic Activities (ISIC, Rev. 3), published by the United Nations Statistical Office. Any slight differences in wording between this chapter and the "Introduction" to the ISIC are needed to make the definitions clearer in an SNA context.

B. Productive Activities

4. Production in the System, as will be discussed in detail in <chapter VI, Production Accounts>, consists of processes, or activities, carried out under the control and responsibility of institutional units that use inputs of labour, capital, and goods and services to produce outputs of goods and

services. Any such activity may be described, and classified, with reference to various characteristics, for example:

- the type of goods or services produced as outputs,
- the type of inputs used or consumed,
- the technique of production employed,
- the ways in which the outputs are used.

The same goods or services may be produced using different methods of production so that there can be no one-to-one correspondence between activities and the goods or services they produce. Certain types of goods may be produced from quite different inputs; for example, sugar may be produced from sugar cane or from sugar beet, or electricity from coal, oil or nuclear power stations or from hydroelectric plants. Many production processes also produce joint products, such as meat and hides, whose uses are quite different.

1. The classification of activities in the System

5. The classification of productive activities used in the System is ISIC (Rev. 3). The criteria used in ISIC to delineate each of its four levels - Class, Group, Division and Section (Tabulation Category) - of the classification are complex. At the Division and Group levels, substantial weight is placed on the nature of the good or service that is produced as the principal product of the activity in question. In this context, this refers to the physical composition and stage of fabrication of the item and the needs served by the item. This criterion furnishes the basis for grouping producer units according to similarities in, and links between, the raw materials consumed and the sources of demand for the items. As well, two other major criteria are considered at these levels: the uses to which the goods and services are put, and the inputs, the process and the technology of production.

6. While it is not necessary for purposes of this chapter to explain the concept of an activity in any detail, it is necessary to clarify the fundamental distinction between principal and secondary activities on the one hand and ancillary activities on the other.

2. Principal, secondary and ancillary activities

a. Principal activities

7. The principal activity of a producer unit is the activity whose value added exceeds that of any other activity carried out within the same unit. (The producer unit may be an enterprise or an establishment as defined below.) The classification of the principal activity is determined by reference to ISIC, first at the highest level of the classification and then at more

detailed levels. The output of the principal activity - its principal product and any by-products (that is, a product necessarily produced together with principal products) - must be suitable for delivery to other units even though it may be used for own consumption or own capital formation.

b. Secondary activities

8. A secondary activity is an activity carried out within a single producer unit in addition to the principal activity and whose output, like that of the principal activity, must be suitable for delivery outside the producer unit. The value added of a secondary activity must be less than that of the principal activity, by definition of the latter. The output of the secondary activity is a secondary product. Most producer units produce at least some secondary products.

c. Ancillary activities

9. The output of an ancillary activity, in contrast, is not intended for use outside the enterprise. An ancillary activity is a supporting activity undertaken within an enterprise in order to create the conditions within which the principal or secondary activities can be carried out. Before trying to give more precision to the concept of an ancillary activity, it is useful to illustrate the kinds of activities that may be ancillary:

- keeping records, files or accounts in written form or on computers;
- communicating in written form or by telephone, telex, telefax, direct computer links, etc. or by messengers, couriers, etc.;
- purchasing of materials and equipment;
- hiring, training, managing and paying employees;
- storing materials or equipment: warehousing;
- transporting goods or persons inside or outside the producer unit;
- promoting sales;
- cleaning and maintenance of buildings and other structures;
- repairing and servicing machinery and equipment;
- providing security and surveillance.

10. In addition to the defining characteristic that they provide support for the principal, or secondary, activities, ancillary activities have certain common characteristics related to their output. These additional characteristics include:

(1) Ancillary activities typically produce outputs that could be found as inputs into almost any kind of productive activity;

(2) Ancillary activities produce services (and, as exceptions, goods that may not become a physical part of the output of the principal or secondary activity) as output;

(3) The value of an individual ancillary activity's output is likely to be small compared with that of the principal or secondary activities of an enterprise.

11. The defining characteristic is by no means sufficient to identify an ancillary activity: there are many kinds of activities whose outputs are entirely consumed within the same enterprise but which could not possibly be considered as ancillary. The characteristic that ancillary activities tend to be found in any productive activity is related to the characteristic that ancillary activities produce services as output. Individual goods do not tend to be needed universally as inputs in the same way as services such as accounting, transportation or cleaning. For example, an enterprise may produce milk, all of which is processed into butter or cheese within the same enterprise. However, milk production cannot be considered an ancillary activity, because milk is not a universal input. Milk becomes a physical part of the output of the principal or secondary output.

12. Certain activities, although common, are not so common as to be considered ancillary. Many enterprises produce their own machinery and equipment, build their own structures and carry out their own research and development. These activities are not to be treated as ancillary, whether carried out centrally or not, as they cannot be construed as being universal in nature.

13. By definition, an ancillary activity is not undertaken for its own sake but purely in order to provide supporting services for the principal or secondary activities with which it is associated. Therefore, both the System and ISIC treat ancillary activities as integral parts of the principal or secondary activities with which they are associated. As a result:

(1) The output of an ancillary activity is not explicitly recognised and recorded separately in the System. It follows that the use of this output is also not recorded.

(2) All the inputs consumed by an ancillary activity - materials, labour, consumption of fixed capital, etc. - are treated as inputs into the principal or secondary activity which it supports.

(3) It is not possible to identify the value added of an ancillary activity because that valued added is combined with the value added of the principal or secondary activity.

Thus, the production accounts of the System provide no direct information about the incidence or range of ancillary activities carried out within producer units. Their existence can only be inferred by studying the structure of the inputs consumed by producers.

(i) Changes in ancillary activities

14. In principle, an enterprise may have a choice between engaging in ancillary activities which provide supporting services for its principal or secondary activities or purchasing such services on the market from specialist service producers. In addition to the obvious difficulty of separating the ancillary activity from the principal and secondary activities, the choice may be restricted by the fact that in practice, the requisite services are often not readily available in the right quantities on local markets.

15. An ancillary activity may grow to the point that it has the capacity to provide services outside the enterprise. For example, a computer processing unit may develop in-house capabilities for which there is an outside demand. When an activity starts to provide services to outsiders, at some point the activity may have to be treated as secondary rather than ancillary.

(ii) The role of ancillary activities in the economic system

16. As the existence of ancillary activities is not explicitly recognised in the System or in production statistics generally, it is difficult to obtain information about their role in the economy. For example, it is difficult to know how much output they produce, how many persons are engaged in such activities, how many resources they consume, and so on. This may be regarded as a serious disadvantage for certain purposes, such as analysing the impact of "information technology" on productivity when the processing and communication of information are typical ancillary activities. However, it would be difficult and costly to obtain detailed information about the entire range of ancillary activities undertaken within producer units. Moreover, the values of their outputs would all have to be imputed. However, for some types of analysis it may be useful and necessary to estimate and record these activities separately (see <chapter XXI, Satellite Accounts>).

C. Partitioning Enterprises into More Homogeneous Units

17. As already stated, "enterprise" is the term used in the System to describe an institutional unit in its capacity as a producer of goods and services. An enterprise may therefore be any of the following kinds of institutional units:

- a corporate (including quasi-corporate) enterprise;
- a unincorporated enterprise;
- an NPI.

18. Although it is possible to classify enterprises according to their principal activities using the ISIC and to group them into "industries", some of the resulting "industries" are likely to be very heterogeneous because some enterprises may have several secondary activities which are quite different from their principal activities. In order to obtain groups of producers whose

activities are more homogeneous, enterprises have to be partitioned into smaller and more homogeneous units.

1. Kind-of-activity units

19. One way to partition an enterprise is by reference to activities. A unit resulting from such a partitioning is called a kind-of-activity unit, defined as an enterprise, or a part of an enterprise, which engages in one kind of (non-ancillary) productive activity or in which the principal productive activity accounts for most of the value added. Each enterprise must, by definition, have at least one kind-of-activity unit. Such partitioning can be expected to yield units that are relatively homogeneous with respect to cost structure and technology of production.

2. Local units

20. Enterprises often engage in productive activity at more than one location, and for some purposes it may be useful to partition them accordingly. Thus, a local unit is defined as an enterprise, or a part of an enterprise, which engages in productive activity at or from one location. The definition has only one dimension in that it does not refer to the kind of activity that is carried out. Location may be interpreted according to the purpose - narrowly, such as a specific address, or more broadly, such as within a province, state, county, etc.

3. Establishments

21. The establishment combines both the kind-of-activity dimension and the locality dimension. An establishment is defined as an enterprise, or part of an enterprise, that is situated in a single location and in which only a single (non-ancillary) productive activity is carried out or in which the principal productive activity accounts for most of the value added.

22. Although the definition of an establishment allows for the possibility that there may be one or more secondary activities carried out, they should be on a small scale compared with the principal activity. If a secondary activity within an enterprise is as important, or nearly as important, as the principal activity, then that activity should be treated as taking place within a separate establishment from that in which the principal activity takes place. The definition of an establishment does not permit an ancillary activity to constitute an establishment on its own.

23. Thus, establishments are designed to be units for which data are suitable for analyses of production in which the technology of production plays an important role. However, it may still be necessary to transform the resulting data subsequently for purposes of input-output analysis, as

explained briefly below in describing the unit of homogeneous production and in more detail in <chapter XV on supply and use and input-output tables>.

24. In practice, an establishment may usually be identified with an individual workplace in which a particular kind of productive activity is carried out: an individual farm, mine, quarry, factory, plant, shop, store, construction site, transport depot, airport, garage, bank, office, clinic, and so on. It is important to remember, however, that ancillary activities are not separately distinguished and recorded in the System so that repair shops, sales departments, accounts departments, computing departments and so on whose activities are ancillary in nature are not treated as separate establishments (even though the activity, if carried out independently, would be considered an establishment).

a. The data for establishments

25. Establishments are conceptually quite distinct from institutional units. If an institutional unit contains only a single establishment, the two units coincide in the sense that the production account for the establishment is the same as that for the institutional unit. However, an establishment as such is not an institutional unit of the System, engaging in transactions on its own account, incurring liabilities, entering into contracts, and so on. For example, the purchases and sales associated with the productive activities of an establishment are actually made by the institutional unit to which it belongs and not by the establishment itself. It is not possible, therefore, to envisage a complete set of accounts, including balance sheets, being compiled for an establishment, not because of practical data difficulties but because an establishment is not an entity capable of owning goods or assets in its own right or capable of receiving or disbursing income, and so on.

26. The only data which can meaningfully be compiled for an establishment relate to its production activities. They include the following:

(1) the items included in the Production Account and the Generation of Income Account;

(2) statistics of numbers of employees, types of employees and hours worked;

(3) estimates of the stock of capital and land used;

(4) estimates of gross fixed capital formation undertaken.

27. The compilation of a Production Account and a Generation of Income Account implies that it must be feasible to calculate output and intermediate consumption and thus value added and also compensation of employees, taxes on production and imports, subsidies and the operating surplus/mixed income. In principle, it must be feasible to collect at least the above kinds of

statistics for an establishment, even if they may not always be available, or needed, in practice.

b. Application of the principles in specific situations

28. The application of the principles given above for partitioning an enterprise into establishments is not always clear cut. This section discusses several situations in which the organization of production is such that the application is particularly difficult.

(i) Central ancillary activities

29. When the production of an enterprise takes place in two or more different establishments, certain ancillary activities may be carried out centrally for the benefit of all the establishments collectively. For example, the purchasing, sales, accounts, computing, maintenance or other departments of an enterprise may all be the responsibility of a head office which is located separately from the establishments in which the principal or secondary activities of the enterprise are carried out. In such a case, the costs of the central ancillary activities must be allocated to the establishments which they serve and added to the latters' costs.

(ii) Establishments within integrated enterprises

30. A horizontally integrated enterprise is one in which several different kinds of activities which produce different kinds of goods or services for sale on the market are carried out in parallel with each other. It follows from the definition of an establishment that a separate establishment should normally be identified for each different kind of activity.

31. A vertically integrated enterprise is one in which different stages of production, which are usually carried out by different enterprises, are carried out in succession by different parts of the same enterprise. The output of one stage becomes an input into the next stage, only the output from the final stage being actually sold on the market. There are numerous examples of vertically integrated enterprises.

32. For example, an enterprise may use its own fishing fleet to catch the fish it then processes into frozen or canned food products, i.e., manufactured products. Similarly, an enterprise may have its own plantations on which it grows the tea it then processes and blends into packages of tea for sale to final consumers. A manufacturer of bricks may process clay mined from its own quarries. A striking feature of the examples just given is that the vertical integration extends beyond different stages of manufacturing by integrating fishing, agriculture, or mining with manufacturing. However, examples could also be given of vertical integration within manufacturing or of vertical integration that does not involve manufacturing.

33. From an accounting point of view it can be difficult to partition a vertically integrated enterprise into establishments because values have to be imputed for the outputs from the earlier stages of production which are not actually sold on the market and which become intermediate inputs into later stages. Some of these enterprises may record the intra-enterprise deliveries at prices that reflect market values, but others may not. Even if adequate data are available on the costs incurred at each stage of production, it may be difficult to decide what is the appropriate way in which to allocate the operating surplus of the enterprise among the various stages. One possibility is that a uniform rate of profit could be applied to the costs incurred at each stage.

34. Despite the practical difficulties involved in partitioning vertically integrated enterprises into establishments, it is recommended that when a vertically integrated enterprise spans two or more headings at the first level of breakdown of the ISIC, at least one establishment must be distinguished within each heading. The first breakdown of activities in the ISIC corresponds to broad industry groups such as Agriculture, Fishing, Mining and Quarrying, Manufacturing, etc.

(iii) Establishments owned by general government

35. Government units, especially central governments, may be particularly large and complex in terms of the kinds of activities in which they engage. The principles outlined above have to be applied consistently and systematically to government units. The procedures to be followed when dealing with the main kinds of producer units owned by government may be summarised as follows.

36. An unincorporated producer unit owned by government may sell or otherwise dispose of its output on the market at prices that are economically significant. These producers are described as market producers. (For a fuller treatment of market producers and non-market producers, see <chapter VI, Production Accounts>.) For example, a municipal swimming pool or a government publishing office may be a market producer. An unincorporated market producer may be treated as a quasi-corporation if it is independently managed and if its accounts permit its income, saving and capital to be measured separately from government so that flows of income, or capital, between the unit and government can be identified. If it is treated as a quasi-corporation, it ceases to be part of the government sector and is treated with respect to partitioning into establishments in the same way as a publicly owned corporation. Market producers owned by government which are not quasi-corporations should be partitioned into two or more separate establishments if they are engaged in two or more different kinds of activities or if they are situated in two or more different locations.

37. A producer unit owned by government may supply output free or at prices that are not economically significant. These producers are described as non-market producers. A distinction needs to be drawn between non-market

producers owned by government which deliver final goods or services to the community, either individually or collectively, and those which produce goods or services for use by other government units.

38. Non-market producers providing final goods or services - such as public administration, defence, health and education - should be partitioned into establishments using the activity classification given in Divisions 75, 80, 85 and 90 of the ISIC. Agencies of central government may be dispersed over the country as a whole in which case it will be necessary to distinguish different establishments for activities which are carried out in different locations.

39. Non-market producers which supply goods or services to other government agencies or departments should be treated as follows:

(i) When a government agency supplies goods to other government agencies it must be treated as a separate establishment and classified under the appropriate heading of ISIC. This applies to the production of munitions or weapons, printed documents or stationery, roads or other structures and so on. The units must always be identified as separate establishments for two reasons. First, a government which produces its own weapons to supply to its own armed forces is, in effect, a vertically integrated enterprise which spans two or more headings at the first level of ISIC. At least one separate establishment must be distinguished in each heading therefore. The same argument applies to a government printing office and other goods producers owned by government. Second, except as noted earlier with respect to goods that do not become a physical part of a principal or secondary product, production of goods is not considered ancillary activity. An activity which supplies goods to an establishment producing services should be treated as a separate establishment.

ii) The situation of government agencies supplying supporting services - for example, transport pools and computing departments - to other government agencies is less clear. Normally it will be appropriate to treat them as ancillary activities whose costs are to be distributed over the various establishments which they serve in proportion to the imputed value of the non-market output of the latter. However, exceptions to this general principle may be envisaged in the case of very large specialised agencies serving central government as a whole - for example, a very large computer or communications agency - which may be so large that it is appropriate to treat it as a separate establishment.

D. Industries

40. Industries are defined in the System in the same way as in ISIC: that is, an industry consists of a group of establishments engaged on the same, or similar, kinds of activity. At the most detailed level of classification, an industry consists of all the establishments falling within a single Class of ISIC and which are therefore all engaged on the same activity as defined in the ISIC. At higher levels of aggregation corresponding to the Groups, Divisions and, ultimately, Sections of the ISIC, industries consist of groups of establishments engaged on similar types of activities.

1. Market and non-market producers

41. The term "industry" is not reserved for market producers. An industry, as defined in the ISIC and the present version of the System, consists of a group of establishments engaged on the same type of productive activity, irrespective of whether the institutional units to which they belong are market or non-market producers. The distinction between market and non-market production is a different dimension of productive - and, more broadly, economic - activity. For example, the health industry in a particular country may consist of a group of establishments, some of which are market producers while others are non-market producers. Because the distinction between market and non-market production is based on a different criterion from the nature of activity itself, it is possible to cross-classify establishments by type of activity and by whether or not their output is market. Thus, there is no difficulty about separating market from non-market production within the same industry, if desired.

2. Industries and products

42. As already mentioned, a one-to-one correspondence does not exist between activities and products and hence between industries and products. Certain activities produce more than one product simultaneously, while the same product may sometimes be produced by using different techniques of production.

43. When two or more products are produced simultaneously by a single productive activity they are "joint products". Examples of joint products are meat and hides produced by slaughtering animals or sugar and molasses produced by refining sugar canes. The by-product from one activity may also be produced by other activities, but there are examples of by-products, such as molasses, which are produced exclusively as the by-products of one particular activity.

44. The relationship between an activity and a product classification is exemplified by that between the ISIC and the CPC, or Central Product Classification of the United Nations Statistical Office. The CPC is the classification of products in the System. It is a classification based on the physical characteristics of goods or on the nature of the services rendered.

However, each type of good or service distinguished in the CPC is defined in such a way that it is normally produced by only one activity as defined in ISIC. Conversely, each activity of the ISIC is defined in such a way that it normally produces only one type of product as defined in the CPC (where each type of product may have a number of individual products coded under it). So far as practically possible, an attempt is made to establish a one-to-one correspondence between the two classifications, each category of the CPC being accompanied by a reference to the ISIC class in which the good or service is mainly produced. However, such a one-to-one correspondence is not always possible. In practice, therefore, the output of an industry, no matter how narrowly defined, will tend to include more than a single product.

E. Units of Homogeneous Production

45. In most fields of statistics the choice of statistical unit, and methodology used, are strongly influenced by the purposes for which the resulting statistics are to be used. A unit which is defined in such a way that it would be optimal for a particular type of analysis is described as an "analytical unit".

46. For purposes of input-output analysis, the optimal situation would be one in which each producer unit were engaged in only a single productive activity so that an industry could be formed by grouping together all the units engaged on a particular type of productive activity without the intrusion of any secondary activities. The appropriate analytical unit for purposes of input-output analysis is, therefore, a "unit of homogeneous production", which may be defined as a producer unit in which only a single (non-ancillary) productive activity is carried out. If a producer unit carries out a principal activity and also one or more secondary activities, it will be partitioned into the same number of units of homogeneous production. If it is desired to compile production accounts and input-output tables by region, it is necessary to treat units of homogeneous production located in different places as separate units even though they may be engaged in the same activity and belong to the same institutional unit.

47. Although the homogeneous unit of production may be the optimal unit for purposes of certain kinds of analysis, particularly input-output analysis, it may not always be feasible to partition establishments or even establishments with one or more secondary productive activities into a series of mutually exclusive units of homogeneous production. In situations of this kind, it will not be possible to collect directly from the enterprise or establishment the accounting data corresponding to units of homogeneous production. Such data may have to be estimated subsequently by transforming the data supplied by enterprises on the basis of various assumptions or hypotheses. These will be discussed in detail in <chapter XV, Supply and Use, Input-Output>.